



**City of Santa Barbara**  
Public Works Department

**Memorandum**

**DATE:** February 16, 2011

**TO:** Creeks Restoration/Water Quality Improvement Program  
Citizen Advisory Committee

**FROM:** Brian D'Amour, Engineering Supervisor  
Jessica W. Grant, Project Planner

**SUBJECT:** SYCAMORE CREEK WIDENING PROJECT

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COMMITTEE DIRECTION – FOR DISCUSSION

That the Committee receive a presentation and discuss the Sycamore Creek Widening Project.

DISCUSSION

Project Goal

The purpose of the Sycamore Creek Widening Project is to increase flood capacity, and improve water quality and habitat restoration.

Project Purpose and Need

Construction of the cross-town freeway, including the original Highway 101 Bridge over Sycamore Creek, coupled with development upstream along the Creek, has enlarged the 100-year flood plain. This has resulted in past flooding north of, and including Highway 101, such as in 1995, when after an intense rainstorm, nearly four feet of water flooded properties adjacent to Sycamore Creek, including the Deluxe and Green Mobile Home Parks.

In addition, runoff and sediment loads have increased as a result of the Tea Fire, which burned much of the upper Sycamore Creek watershed. The principal concern due to the Tea Fire is an increase in the potential for in-channel floods, hyper-concentrated floods, debris torrents, mud sliding, and debris flows. This is largely due to the loss of mechanical support of hill slope materials from vegetation and vegetative litter, and the development of hydrophobic soils. The capacity and maintenance of the surface water collection and drainage system of pipes, culverts, and bridges in the watershed, are inadequate for flood flow conveyance.

To address the flood capacity, channel improvements and habitat restoration of Sycamore Creek watershed, requires bridge replacements starting from the East Beach Pedestrian Bridge (i.e. mouth of Sycamore Creek) and ending at Yanonali Bridge. That stretch of creek will also require channel widening and habitat restoration. The timeframe for completing all of these improvements is about 20 to 30 years. Due to funding constraints, we will be proceeding with initial work north of Highway 101 and just north of Punta Gorda Street Bridge. The CEQA

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document will only cover the work north of Highway 101 and just north of Punta Gorda Street Bridge.

### Project Description

The proposed project involves two initial improvement phases just north of Highway 101, and ending just north of the Punta Gorda Street Bridge.

Phase 1 consists of channel improvements only, beginning 5-feet north of the Highway 101 right of way, and continuing upstream to 100- to 150- feet south of the Punta Gorda Street Bridge. The improvements consist of a graded earth channel with rock riprap toe protection where the top of bank is approximately 60 feet wide, thereby matching the existing public right of way. Channel grading stops prior to the Punta Gorda Street Bridge, so that the existing driveway entrance to the Green Mobile Home Park can be temporarily preserved.

Phase 2 consists of replacement of the Punta Gorda Street Bridge and channel improvements from the northerly end of Phase 1 toward Liberty Street, 55- to 75- feet upstream of the Punta Gorda Street Bridge Street. The improvements consist of a graded earth channel with rock riprap toe protection, and removal of the Punta Gorda Street reinforced concrete box culvert. The new bridge is proposed to be a prefabricated bridge (Conspan or similar). This type of bridge was selected because of the limited impact to the creek including less dewatering, earthwork, and wet concrete in the channel.

Current flood capacity within the project area is limited to approximately 900 and 1,600 cubic feet per second (cfs) between Highway 101 and Punta Gorda Street. This corresponds to a return event between 6 and 12 years. The improvements proposed for this project will provide flow rates at approximately 2,000 cfs, corresponding to an approximate 17-year return event.

The typical channel cross section is a 20-foot wide bottom and a 28-foot wide bridge span at Punta Gorda Street. The proposed creek banks will be at a 2 to 1 slope.

### Project Habitat Restoration

The project proposes to remove approximately 0.30 acres of existing creek habitat, and replace it with approximately 0.57 acres of habitat (total project). Phase 1 includes an estimated removal of approximately 0.10 acres, and replacement with approximately 0.23 acres of creek habitat. Phase 2 includes an estimated removal of approximately 0.20 acres, and replacement with approximately 0.34 acres of creek habitat. Creek habitat was measured from top of bank to top of bank.

Planting consists of two planting zones on each side of the creek. The lower portion of the planting area will consist of a riprap layer and several inches of soil on top. It will be planted with riparian shrubs such as mulefat and blackberry. Above that zone, arroyo willows will be planted from cuttings to form a relatively continuous canopy over the creek. In the same zone, sycamores, coast live oaks, and elderberries will form the outer riparian canopy with medium and smaller shrubs planted densely to form a diverse understory.

The restoration specialist would use judgment to adjust planting locations in the field to make good use of micro site conditions that would favor one species over another. For example, although the upper zone includes sycamores and willows, they will not be distributed evenly.

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Rather, willows will be planted lower on the slope, and sycamores will be planted higher on the bank.

The anticipated planting maintenance period will be about five years. After the planting maintenance period, the City will coordinate with County Flood Control on creek maintenance, since they currently provide yearly maintenance on this portion of Sycamore Creek.

### Budget and Timeline

Phase 1 will be funded by the Disaster Recovery Initiative (DRI) Grant, which is a federally funded grant sponsored by the U.S. Housing and Urban Development (HUD) to assist with efforts to reduce the human, physical, and economic toll of future disasters. Additional DRI grant monies recently became available and we are working with HUD to fund Phase 2. Total project cost is about \$2 million; Phase 1 is \$500,000 and Phase 2 is \$1.5 million.

JG/sk

cc: Pat Kelly, Assistant Public Works Director/City Engineer  
Jill E. Zachary, Assistant Parks and Recreation Director  
Cameron Benson, Creeks Restoration/Clean Water Manager